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REC'D 30 MAR 2006

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 103609 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2004/011968	International filing date (day/month/year) 22.10.2004	Priority date (day/month/year) 23.10.2003
International Patent Classification (IPC) or both national classification and IPC INV. B29C31/04 B29C43/08 B29C43/34		
Applicant SACMI COOPERATIVA MECCANICI IMOLA SOCIETA'CO.et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 10 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 11 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 27.01.2006	Date of completion of this report 28.03.2006
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Topalidis, A Telephone No. +49 89 2399-2970 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP2004/011968**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-28 as originally filed

Claims, Numbers

1-76 received on 03.02.2006 with letter of 02.02.2006

Drawings, Sheets

1/20-20/20 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
- (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-48,63-67,75,76 .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-38
	No: Claims	39-48,63-68,75,76
Inventive step (IS)	Yes: Claims	1-38
	No: Claims	39-48,63-67,75,76
Industrial applicability (IA)	Yes: Claims	1-48,63-67,75,76
	No: Claims	

2. Citations and explanations

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see separate sheet

Re Item IV.

1. This Authority considers that there are four inventions covered by the claims indicated as follows:

I: Claims 1-48,63-67,75,76 directed to supporting the dose of material during feeding in the moulds

II: Claims 49-55 directed to severing a dose of material from an extruder

III: Claims 57-62 directed to conditioning the dose of material during feeding in the moulds

IV: Claims 56,68-74 directed to compression moulding multi-layered items.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

2. The common technical features to the inventions are identified as being:
 - a) moulding unit, having a punch and a cavity mould movable along a path between
 - b) an opening position in which said punch and said cavity mould are distanced apart from each other to receive a dose of plastics therebetween (see position in fig. 1) and
 - c) a closing position in which said punch and said cavity mould interact to form an item by pressing said dose into said cavity mould,
 - d) said punch being kept not above said cavity mould along said path.
3. The prior art has been identified as document US-A-5 807 592 (D1) and discloses all the common technical features a) to d) as outlined above.
4. The following technical features of claims 1-48,63-67,75,76 make contribution over the prior art as disclosed in D1 and can be considered as special technical features within the meaning of Rule 13.2 PCT:
 - a) providing supporting means for supporting the dose of material,
 - b) the supporting means are mounted externally of the cavity mould
5. The problem to be solved by the first invention is thus identified as how to support the dose of material during feeding the dose to the moulds.

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6. The following technical features of claims 49-55 make contribution over the prior art as disclosed in D1 and can be considered as special technical features within the meaning of Rule 13.2 PCT:
 - a) providing a dose delivery mouth of an extruder between the moulds,
 - b) providing a severing arrangement to sever the dose from the extruder.
7. Thus, the problem solved by the second invention according to claims 49-55 can therefore be construed as how to feed from an extruder.
8. The following technical features of claims 57-62 make contribution over the prior art as disclosed in D1 and can be considered as special technical features within the meaning of Rule 13.2 PCT:
 - a) providing channel means
 - b) the channel means surrounding the mould receiving the dose of material in the opening position.
9. Thus, the problem solved by the third invention of claims 57-62 can therefore be construed as how to condition the dose of material during feeding in the mould.
10. The following technical features according to claims 56,68-74 make contribution over the prior art as disclosed in D1 and can be considered as special technical features within the meaning of Rule 13.2 PCT:
 - a) providing a plurality of doses.
11. Thus, the problem solved by the third invention according to claims 56,68-74 can therefore be construed as how to make multi-layered items.
12. In conclusion, since the problems are different and the features which solve these problems are different, there are no corresponding special technical features; therefore the groups of claims define four different inventions not linked by a single general inventive concept.
13. The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

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Re Item V.

1. The following documents (D) are referred to in this report:

D1 US-A-5 807 592
D2 US-A-4 943 405
D3 WO-A-03 090 989
D4 WO-A-03 090 990
D5 EP-A-1 293 332
D6 US-A-4 913 871

I. Novelty/inventive Step

Claim 1

2. The invention according to claim 1 relates to an apparatus comprising a moulding unit 3,3a having a punch 5,5a and a cavity mould 4,4a for compression moulding a dose (D) of material and a supporting arrangement for supporting the dose according to the features of claim 1. D1 is considered to be the closest prior art document.
3. In order to achieve uniform cooling conditions for the dose of material, the supporting arrangement of the invention is extending externally of the cavity mould so as to support the dose between the punch and the cavity mould.
4. This construction is neither known in the art nor can it be rendered obvious to a skilled person by the devices known from the constructions of the prior art.
5. Thus, claim 1 meets the requirements of novelty and inventive step according to Articles 33(2) and 33(3) PCT.

Dependent Claims 2 to 32

6. Dependent claims 2 to 32 define further advantageous and non-obvious variations of the cooling pin according to claim 1 and thus equally meet the requirements of

novelty and inventive step according to Articles 33(2) and 33(3) PCT.

Independent Apparatus Claim 33

7. From D2 (see column 3, line 42 to column 5, line 14; figures) there is known an apparatus comprising:
 - a) a moulding unit (see fig. 3,4) having a punch 13 and a cavity mould 5 movable between
 - b) an opening position in which said punch 13 and said cavity mould 5 are distanced apart from each other to receive a dose of plastics therebetween (see fig. 3), and
 - c) a closing position in which said punch 13 and said cavity mould 5 interact to form an item by pressing said dose into said cavity mould 4 (see fig. 4), and
 - d) supporting means 8.
8. The apparatus according to claim 33 differs from this prior art in that
 - e) the supporting arrangement is extending externally of said cavity mould 4,4a for supporting the dose between the punch and the cavity mould in the open position and
 - f) the supporting arrangement is oscillating by movable cam means.
9. These features provide the effect of supporting the dose of material during feeding outside the cavity mould.
10. This construction is neither known in the art nor can it be rendered obvious to a skilled person by the construction known from D2 even in combination with the constructions known from the prior art.
11. Thus, claim 33 meets the requirements of novelty and inventive step according to Articles 33(2) and 33(3) PCT.

Dependent claims 34 to 38

12. Dependent claims 34 to 38 define further advantageous and non-obvious variations of the apparatus according to claim 33 and thus equally meet the requirements of novelty and inventive step according to Articles 33(2) and 33(3) PCT.

Independent Claims 39,43,46-48,63,

13. These independent claims refer to details concerning the supporting arrangement. However, as the supporting arrangement is not being defined as being extending externally of the cavity mould as defined in claim 33, these claims do not meet the requirements of novelty and inventive step according to Articles 33(2) and 33(3) PCT when regarded against document D2. Moreover, these claims do not meet the requirements of clarity of art. 6 PCT (see Item VIII below).

Dependent Claims 40-42,44,45,64-67

14. The features of these claims do not seem to be of inventive relevance as they relate to details known from the prior art or seem to be conventional.

Independent Method Claims 75,76

15. The relevant features concerning the supporting arrangement being extending externally of the cavity mould are missing. The same objections as raised against the independent claims in ch. 13 above apply accordingly.

Industrial Applicability

16. The subject-matter of claims 1-48,63-67,75,76 is able to work, can be manufactured, and is thus looked upon as being industrially applicable.

II. Clarity

1. Although apparatus claims 1,33,39,43,46-48,63 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT. The same objection apply for the independent method claims 75,76.
2. According to the requirements of clarity of Article 6 PCT all of the essential features needed to define the invention should be specified in an independent claim in such a way that a person skilled in the art would have no difficulty in arriving at the subject-matter or method according to the claim.
3. Claim 67 of the present application does not meet the requirement of clarity of Article 6 as the plurality of alternatives "and/or" does not make it possible to define the scope of protection.

III. Further Points

1. The claims are not drafted in the two-part form as required by Rule 6.3 PCT.
2. The description is not consistent with the claims (see Rule 5.1(a) (ii), (iii) PCT). The documents D3,D4 (intermediate documents),D5,D6 reflecting relevant prior art concerning dose supporting arrangements, are not cited by number followed by a brief summary of the relevant contents.

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